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ABSTRACT

This report summarizes the results of a study of the Child Development Centers (CDC), a program operated by the Seattle, Washington public schools to provide social services to students from four to eight years old. Preliminary results from a long-term follow-up study of students successfully terminated from the CDC program between 1973 and 1977 are presented. The report begins with a description of the program and an outline of the evaluation procedures used. Information is then presented regarding the maintenance of gains by students on the Behavioral Rating Form and in school attendance. It is shown that, overall, these gains have persisted for an average of three years after program completion. A comparison of former CDC students' Behavioral Rating characteristics and school attendance with student groups not receiving CDC service is also provided. No significant difference in attendance rates is revealed and Behavioral Rating scores show no significant difference between students with behavioral problems who received CDC aid and those who did not. Appended are data on the academic achievement characteristics of CDC program participants. (APM)

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CHILD DEVELOPMENT CENTERS
1977 EVALUATION REPORT
VOLUME II: A FOLLOW-UP STUDY

REPORT NO. 78-2
JUNE 1979

GERALDINE T. CROCKETT

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Administrative and Service Center
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CHILD DEVELOPMENT CENTERS 1977 EVALUATION REPORT VOLUME II: A FOLLOW-UP STUDY

REPORT NO. 78-2
JUNE 1979

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MANAGEMENT INFORMATION SUMMARY

The Child Development Centers (CDC) Program is operated by the Seattle Public Schools with funds from the National Institute of Mental Health. The program provides counseling and social services primarily to students who are four through eight years old. During the 1977-78 school year, the program was available in twelve elementary schools and Seattle Schools' Head Start Program in the Harborview Community Mental Health catchment area.

Report No. 78-2 summarizes the results of the fourth full year of a projected eight-year longitudinal study of the CDC Program. Volume I of report 78-2, published in April 1978, described the population served, services provided, and student outcomes during the 1976-77 school year. This, the second volume, presents preliminary results of a long-term follow-up study of students successfully terminated from the CDC Program between 1973 and 1977. Successfully terminated students were those students who were judged by their classroom teachers as not being in need of further CDC services.

Results presented in this volume pertain to two major purposes of the study and are summarized below.

Purpose I: To determine maintenance of program gains shown by students successfully terminated from the CDC Program

On the average, CDC students included in the follow-up study maintained the gains achieved during program participation on the following measures:

- Teacher ratings of students' self-esteem and school-related behavior, and
- School attendance

Annual CDC Program evaluations have consistently reported significant behavioral improvement, as measured on the Behavioral Rating Form (BRF), following program participation. February 1978 follow-up data indicated that these gains had persisted for an average of nearly three years.

Purpose II: To compare successfully terminated CDC students with other student groups not receiving service

February 1978 data showed no significant differences in levels of behavioral adjustment between students successfully terminated from the CDC Program and a control group of students chosen in 1975 with similar BRF scores who had never received CDC Program services. Measures on which the groups were compared were:

- Teacher Behavioral Ratings Forms, and
- School attendance

These findings indicate that for the measures selected, there was no discernible difference between the effects of CDC Program services and the lack of these services.

Conclusions

Results of the analyses included in this study varied. On the one hand, former CDC participants included in the follow-up sample maintained the levels of gains in behavioral adjustment and school attendance that they had achieved during program participation for an average of three years. On the other hand, their review ratings on these measures were not significantly different from those shown by similar students selected in 1975 who had not received CDC service. Because it was not possible to determine what, if any, other forms of special service the control students received, it can only be inferred that for the variables selected for the study, CDC service was not clearly superior to other services.

Recommendations

1. It is recommended that District matching funds for the CDC Program be continued for the remaining year of the grant (1979-80). This recommendation is supported by the fact that CDC students included in this study demonstrated behavioral improvement during program participation and that they typically maintained these gains in the three years following participation.

   No comparable outcome data are available to determine if other specific service modes provided in the District are more effective than the CDC Program in remedying the behavioral problems of young students.

2. It is further recommended that during 1979-80, the District conduct a comprehensive assessment of the mental health service needs of young students. The needs assessment should include comparisons of (1) various program costs, (2) the effectiveness of CDC service as opposed to other service delivery modes, (3) the relative effectiveness of selected CDC services compared to the total CDC Program, and (4) the effectiveness of early intervention programs available as opposed to no service at all. This assessment might require a literature search to locate a diagnostic instrument to measure specific differences in individual behavior.

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INTRODUCTION

Background

The Child Development Centers (CDC) Program, funded by the National Institute of Mental Health (NIMH), has been operated since 1973 by the Seattle School District in affiliation with the Harborview Community Mental Health Center. The CDC Program provides early intervention and comprehensive mental health services to students who are four through eight years old. During the 1977-78 school year, the program was available in Seattle School's Head Start Program and in the following twelve elementary schools:

Brighton	Hawthorne	Muir
Colman	Kimball	Van Asselt
Columbia	King	Whitworth
Gatzert	Leschi	Wing Luke

The students served characteristically come from low income, single parent households and have lower than average academic achievement compared to District students. (See Appendix A for a summary of achievement characteristics of CDC Program participants.) The majority of services provided to these students take the form of small group and individual counseling. Anticipated consequences of early intervention are improved behavioral adjustment and attendance in school. A long-term goal of the CDC Program is that program participants, in later years, will demonstrate a lower incidence of contacts with the juvenile justice system and lower school drop-out rates than would be expected if students had not received service.

The CDC Program has been evaluated annually and data have been collected since its implementation. Volume I of this report, published in April 1978, centered on yearly program effects for students receiving CDC Program services during the 1976-77 school year (see Report No. 78-4, Child Development Centers 1977 Evaluation Report, Volume I). That volume provided background information on the CDC Program and summarized the population served, services provided, and student outcomes. Yearly evaluation data are contained in Child Development Centers Programs 1977-78 Evaluation, No. 79-7, Child Development Centers 1976 Evaluation Report, No. 77-4, and in Child Development Centers Evaluation Report, No. 76-7.

Yearly program data reported by the Evaluation Office have shown a consistent pattern of gains in behavioral ratings among students receiving intensive service in the CDC Program immediately following program participation. In the past, however, these yearly results have not been compared in any detail, nor have the effects of program participation been compared to data for students not receiving service. Although students terminated between 1973 and 1977 were not yet old enough to enable systematic study of the effects of program participation on school suspension and drop-out rates and on contacts with juvenile authorities, it is now possible to assess their behavioral adjustment and school attendance two to three years after program participation.

Overview of Volume II

Volume II of this report presents preliminary results of the first long-term follow-up study of students successfully terminated from the CDC Program between 1973 and 1977 as a result of behavioral improvement. The process for identifying successfully terminated students was generally completed in the fall of the school year following program participation. Program participants who returned to CDC schools in the fall were considered successfully terminated unless they were referred again by classroom teachers for additional service. Data reported in this volume pertain to two major purposes of the study:

> Purpose I: To determine maintenance of program gains shown by students successfully terminated from the CDC Program. The evaluation traces the behavioral adjustment and attendance of these students from the period prior to their participation in the program to February 1978.
>
> Purpose II: To compare successfully terminated CDC students with other student groups not receiving service. This evaluation compares the 1977-78 behavioral adjustment and school attendance of successfully terminated students with that of students not served by the program.

The following questions were addressed in this report:

> To what extent do students successfully terminated from the CDC Program maintain gains on measures of school attendance and behavioral adjustment that were achieved during program participation?
>
> How do the 1977-78 behavioral adjustment level and school attendance of students successfully terminated from the CDC Program compare with those of: (a) randomly selected non-participants in the same schools, and (b) similar students who did not receive program services?

Following this introduction is a procedures section which includes a description of the population and sampling, data sources, and data analysis. The next section presents and discusses the results related to each research and evaluation question. The final section presents conclusions and recommendations drawn from information presented in this volume. There are three appendices. Appendix A summarizes the academic achievement patterns of CDC participants and compares their achievement to that of other student groups. Appendix B provides a detailed description of the samples of students drawn for the follow-up study. Appendix C contains a description and analysis of the use of the Behavioral Rating Form for the measurement of self-esteem.

PROCEDURES

Population and Sampling

The major population of interest for the assessment of the maintenance of program gains consisted of all students successfully terminated from the CDC Program from 1973 through 1977. For questions related to school attendance and behavioral adjustment, a randomly selected sample of 121 students was drawn from this population in the fall of 1977.

To compare the effects of program participation with lack of participation, follow-up data for the sample of the 121 successfully terminated students were compared to data for two groups who had never received CDC Program service: (1) a control group of 77 students with a history of behavioral problems, and (2) a randomly selected group of 132 students who did not have a history of behavioral problems.

A more detailed description of the samples used for this study is contained in Appendix B.

Description of Data Sources

The following instruments and records were used in the collection of data contained in this volume.

The Student Master File, maintained by the Seattle School District on all District students. This file was the source of grade, school, ethnic, and sex information for students in the follow-up study.

The Behavioral Rating Form (BRF), completed by classroom teachers. The BRF contains 13 items concerning school adjustment and related behavior. Behavioral ratings for each item on the BRF are scored on a scale of 1 (severe problem) to 5 (no problem). The BRF composite score, a summation of the 13 item scores, can range from 13 (severe behavioral problems on all items) to 65 (no behavioral problem on any item). (See Appendix C)

Individual Student Attendance Data, maintained by individual schools. Attendance data included the number of days absent and the number of days enrolled in school for each semester reported.

Data Analysis

For each student selected for the follow-up study, records collected from classroom teachers, individual schools, and the District were entered on a computer file. All analyses of the data were conducted on the computer with the Statistical Package for the Social Sciences (SPSS).

The specific data analyses for the two major purposes of the follow-up study are described below:

Assessment of maintenance of student gains. To assess school attendance, the percent of days CDC students attended school the semester before their referral to the CDC Program was compared to the percent of days attended during the fall 1977 semester through a t-test. Changes in behavioral adjustment were assessed by comparing students' February 1978 BRF composite scores first to their average scores at the time of their referral to the program (two to three and one-half years earlier) and then to their review ratings upon termination from the program.

Comparison of CDC participants with other student groups. To compare behavioral patterns and attendance of successfully terminated CDC participants to that of other student groups, fall 1977 attendance data and February 1978 BRF scores were collected for students in the random and control groups and compared to data for the sample of CDC students. To examine fall 1977 semester school attendance a percentage of attendance days was computed for each student by dividing the number of days present in school by the number of days enrolled for the semester. Percentages of attendance days of the three groups were compared through a Kruskal-Wallis One-Way Analysis of Variance. To examine behavioral characteristics Behavioral Rating Forms, completed by classroom teachers in February 1978, were collected for students in the three groups. To compare average BRF scores of students in the three groups, an analysis of covariance was performed. This analysis adjusted for the effects of ethnic, sex, and grade level differences between the groups.

Limitations of the Study

Students in the control group included in the comparison of served and not served students were selected in 1975 on the basis of teacher behavioral ratings only. Other information such as family income levels, specific behavioral problems, and counseling services received, was not collected for these students. Therefore it was not possible to compare these students with CDC Program students on these characteristics. In addition, since students in the control group were chosen from non-CDC Program schools, other unknown differences in the characteristics of these two student groups may have existed. These limitations must be kept in mind when interpreting behavioral assessment data.

Preliminary attendance data were not gathered for students in the random and control groups. Thus it was not possible to compare attendance gains of these students to the gains of successfully terminated students.

The follow-up sample of CDC participants was randomly selected from successfully terminated students still enrolled in the District in January 1978. Subsequent data analyses indicated that these students made greater gains during program participation than did the general population from which they were drawn. These results suggest that conclusions drawn in this report may not be generalizable to the entire population of students terminated from the program.

PRESENTATION AND DISCUSSION OF DATA

The analysis of the long-term effects of CDC Program participation is presented in two sections. The first section summarizes data related to the first purpose of this study, to assess the maintenance of program gains for students successfully terminated from the CDC Program. The second section reports data related to the second purpose, to compare the effects of CDC service with the lack of CDC service.

Maintenance of Gains Shown by Students Successfully Terminated from the CDC Program

Persistence of Gains on the Behavioral Rating Form

Average initial, review, and follow-up ratings on the Behavioral Rating Form (BRF) for students who were terminated from the CDC Program are presented in Table 1.*

Only 63 of the 121 CDC students randomly selected for the follow-up study had complete initial, review, and follow-up data. Average initial and review BRF scores for all successfully terminated CDC students (the general population) still enrolled in the District during the 1977-78 school year were also included in the analysis. Two hundred ninety-two of these students had complete initial and review data.

The average behavioral rating gains from initial (40.87) to review (44.01) for students in the sample was 3.14. A comparison of their average February 1978 follow-up rating (43.48) with their review rating at termination from the program showed a slight, but not significant decrease of approximately one half point. These results indicate that CDC students included in the follow-up study have maintained the general levels of gains in self-esteem and behavioral adjustment that were achieved during participation in the program. These gains have persisted for an average of nearly three years.

Comparative BRF data show that follow-up students made greater gains during program participation than the population of successfully terminated students in general. This difference in gain scores may limit the extent to which follow-up results can be generalized.

---

*An analysis was performed to determine if changes in teacher ratings had occurred over time and if the BRF is an appropriate instrument for screening older children. This analysis is presented in Appendix C and indicates that no major changes in BRF scoring patterns have occurred since 1973. In addition, no significant differences were found between students' BRF scores at various grade levels.

TABLE 1

AVERAGE INITIAL AND REVIEW TEACHER BRF RATINGS FOR THE GENERAL POPULATION AND SAMPLE OF CDC PROGRAM STUDENTS TERMINATED BETWEEN SEPTEMBER 1974 AND JUNE 1976

Terminated CDC Students	Average BRF Scores*		
	Initial Rating	Review Rating at Termination from the Program	February 1978 Follow-up Review Rating
General population	40.59 (N=292)	43.08 (N=292)	---
Sample	40.87 (N=63)	44.01 (N=63)	43.48 (N=63)

*Average initial rating was computed at the time of students' initial referral to the program, which spanned the period between fall 1974 and spring 1976. Average review rating at termination from the program was also computed for this time period. Complete BRF data were not available for 49 successfully terminated students selected for the follow-up study.

TABLE 2

COMPARISON OF SEMESTER DAYS ATTENDANCE FOR CDC PROGRAM STUDENTS TERMINATED BETWEEN 1973 AND 1977

School Year Semester	Average Percent of School Days Attended
Before referral to program	.93 (N=76)
Fall 1976	.95 (N=509)
Fall 1977	.95 (N=76)*

*Statistically significant positive increase in attendance above that of the semester before students were referred to the program.

Persistence of Gains in School Attendance

A comparison of the average percent of days that the sample of terminated students attended school (1) the semester before they were referred to the program, and (2) fall semester 1977 (an average of three years after program participation) is presented in Table 2. Also shown are fall semester 1976 data (an average of two years after program participation) for all students who were successfully terminated from the program.

The semester before referral to the program, CDC students attended school 93 percent of the days enrolled, compared to 95 percent of the days enrolled fall semester 1977. This difference was found to be statistically significant and represents an actual increase of nearly two full semester days. Furthermore, this improvement persisted over time, as shown in the identical percentages of days attended in the fall 1976 and fall 1977 semesters. Thus CDC students have maintained the gains in attendance achieved during program participation after their release from the program.

Summary

Overall, CDC students in the follow-up study have maintained the positive behavioral and attendance gains they achieved during program participation. These gains have persisted for an average of three years after students were released from the program.

Comparison of Successfully Terminated CDC Students' Behavioral Characteristics and School Attendance with Those of Other Student Groups Not Receiving Service

Previous evaluations have focussed on internal assessment of the yearly effects of CDC Program participation. Few comparisons of CDC Program participants with other student groups not receiving CDC Program service have been systematically conducted. The following section compares the behavioral characteristics and school attendance of successfully terminated CDC Program participants with those of a group of students with a history of behavioral problems (control group) and a second group of students without known problems (random group). Students in these latter two groups did not receive CDC Program services. Since students in the random group did not have a history of known behavioral problems, their data represent baseline information and are included for general comparison purposes.

Comparison of Behavioral Rating Scores

Average BRF composite scores for students in the three groups are presented in Table 3. To account for sex, ethnic, and grade differences between the three groups, an analysis was conducted to adjust statistically for these differences. These adjustments did not significantly change the direction of the results shown in the table.

Students in the random group had a significantly higher average BRF composite score than students in the CDC and control groups. The higher average rating of students in the random group was not unexpected given that these students had no known history of behavioral problems, in contrast to students in the other two groups.

Terminated CDC students had a slightly higher score than students in the control group; however, this difference was not statistically significant. These results indicate that students in the control group had shown improvement in self-esteem and related school behaviors that was similar to that shown by students who received CDC Program services. It is not known what type of intervention occurred for students in the control group between the time they were initially selected and the time at which their review data were collected. However, it is likely that some of these students were provided with some counseling services in their schools from District Student Services staff. The lack of service and demographic data for these control students hinders study of the variables possibly related to their behavioral improvement.

Comparison of School Attendance

The average percentages of fall 1977 semester attendance days for the three groups of students in the study are presented in Table 4. No significant differences were found in the attendance rates of the three groups.

Overall, the fall 1977 semester school attendance of terminated CDC students was similar both to the average attendance of randomly selected students with no known history of behavioral problems, and to that of control students with behavioral problems who had never received CDC Program services.

Summary

Follow-up data showed that the two groups of students with behavioral problems who were initially identified two to three years previously (CDC participants and control group students) continued to show lower behavioral ratings than students without a history of behavioral problems. Although students terminated from the CDC Program have maintained behavioral gains achieved during program participation, there still remains a significant difference between their Behavioral Rating Form scores and the scores of randomly selected students in the District. In 1978, students terminated from the CDC Program and students in the control group had similar behavioral ratings and school attendance. These results indicate that for the variables selected for this comparison study, no measurable differences were found between the effects of service provided by the CDC Program and the lack of these services. Because no determination was made of the kinds of service, if any, received by control students, further study is needed to compare the effects of various modes of counseling services available to young students in the District to the effects of no service.

TABLE 3

FEBRUARY 1978 AVERAGE BRF COMPOSITE SCORES
FOR STUDENTS IN THE CDC, CONTROL, AND RANDOM GROUPS

CDC	Control	Random
44.88 (N=112)	43.00 (N=76)	48.78* (N=120)

*Significantly higher than average scores of students in the CDC and control groups.

TABLE 4

AVERAGE PERCENT OF DAYS* STUDENTS IN THE CDC, CONTROL, AND RANDOM GROUPS ATTENDED SCHOOL FALL SEMESTER 1977

CDC	Control	Random
.95 (N=121)	.94 (N=75)	.94 (N=131)

*No significant difference in percentage of days was found between the groups.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations based on 1976-77 program data are presented in Volume I of this report. Analysis of long-term data related to the two major purposes of the follow-up study presented in this volume (Volume II) led to the following conclusions and recommendations.

Conclusions

Purpose I: To determine maintenance of gains shown by students successfully terminated from the CDC Program. CDC students included in the follow-up study have maintained the gains in self-esteem and school attendance that were achieved during program participation. These gains have persisted for an average of nearly three years.

Purpose II: To compare successfully terminated CDC Program students with other student groups not receiving service. No significant differences in average BRF composite scores or school attendance were found between CDC students and a control group of students chosen in 1975 with similar BRF scores who did not participate in the program. These findings suggest that for the measures selected for the comparison study, there was no discernable difference in the effectiveness of CDC services as opposed to lack of these services. As discussed in the limitations section of this report, demographic and treatment data were not available for students in the control group. In the absence of such information it is not possible to determine what factors contributed to the behavioral improvement of control students.

Recommendations

1. It is recommended that District matching funds for the CDC Program be continued for the remaining year of the grant (1979-80). This recommendation is supported by the fact that CDC students included in this study demonstrated behavioral improvement during program participation and that they typically maintained those gains in the three years following participation.

   No comparable outcome data are available to determine if other specific service modes provided in the District are more effective than the CDC Program in remedying the behavioral problems of young students.

2. It is further recommended that during 1979-80, the District conduct a comprehensive assessment of the mental health service needs of young students. This study should include comparisons of (1) various program costs, (2) the effectiveness of CDC service as opposed to other service modes, (3) the relative effectiveness of selected CDC services compared to the total CDC Program, and (4) the effectiveness of early intervention programs available as opposed to no service at all. This assessment might require a literature search to locate a diagnostic instrument to measure specific differences in individual behavior.

APPENDIX A

ACADEMIC ACHIEVEMENT CHARACTERISTICS OF CDC PROGRAM PARTICIPANTS

Two analyses were performed to determine the academic achievement characteristics of CDC program participants. The first analysis compares the academic achievement patterns of CDC participants with those of students in the District and students in their schools (see Introduction for a listing of the twelve CDC Program schools). The second analysis compares the 1977 academic achievement of students successfully terminated from the CDC program with that of students in the control and random groups included in the follow-up study (see Procedures section for a description of the three groups).

Academic Achievement Patterns of CDC Program Participants

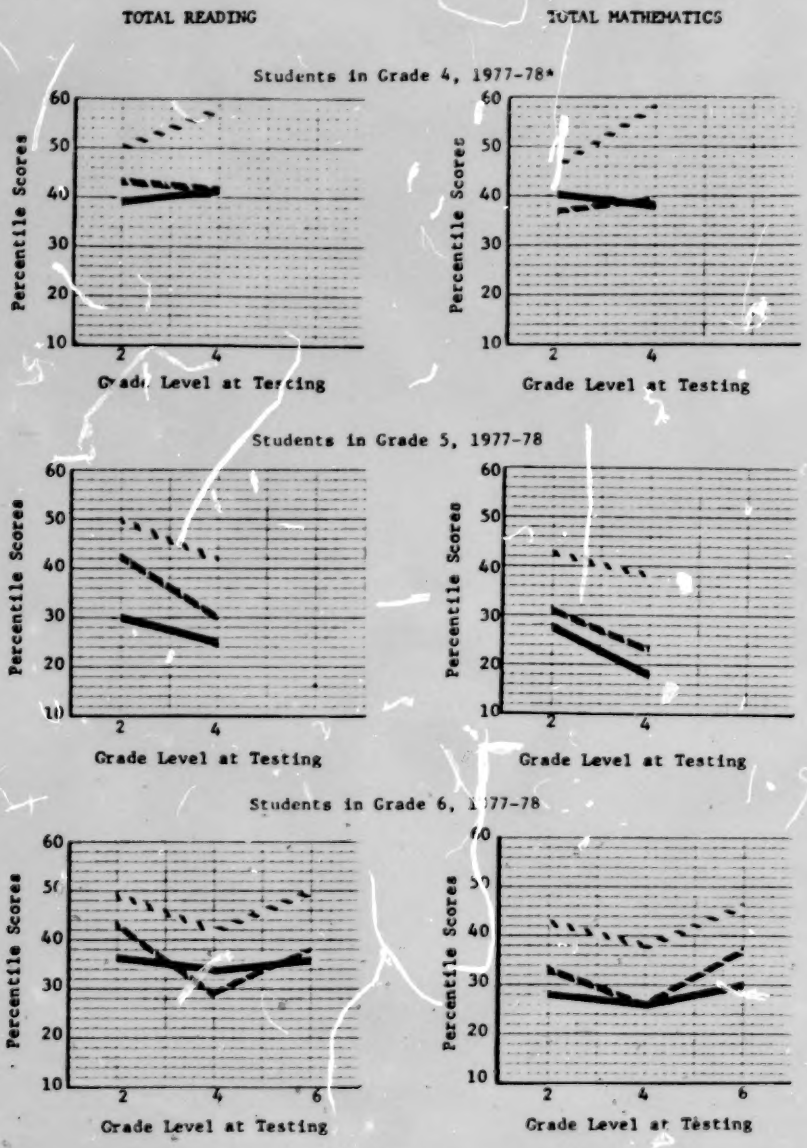
To analyze trends in the academic achievement of students successfully terminated from the CDC Program between 1973 and 1977, their most recent fall average percentile scores on the Total Reading and Total Mathematics subtests of the Metropolitan Achievement Test (MAT) were compared to their average percentile scores from previous testing periods. Their scores were also compared to those of students in CDC Program schools and students in the District. This analysis was limited to students in grades four through six during the 1977-78 school year. The test scores were not linked to the year(s) in which students received CDC Program service.

Figure 1 compares academic achievement trends of CDC students, students in CDC schools, and students in the District. Historically, District students fourth grade test scores have been lower than their second grade scores (see Report No. 76-6, Summary of Results from the October 1975 Administration of the Metropolitan Achievement Test Battery in the Seattle Public Schools). An exception to this trend is evident in fall 1977 fourth grade percentile scores. To meet the requirements of a recent Washington State law, all fourth grade students were tested in fall 1977 with the Comprehensive Test of Basic Skills (CTBS). Preliminary analysis indicates that District students score higher on the CTBS than on the MAT. Thus, the traditional drop in fourth grade test scores was not evident in fall 1977 CTBS testing results for the total District.

Achievement trend data indicated that students in CDC schools showed a pattern of lower than average academic achievement compared to other students in the District. The scoring pattern of CDC students reflected the achievement levels of their schools. The deviation of CDC school average scores from those of the District was particularly evident in the results of fall 1977 CTBS testing. While District students scored an average of ten percentile points higher on fourth grade CTBS subtests than they had on second grade MAT, fourth graders in CDC schools showed deficits in reading and only slightly higher average

FIGURE 1

COMPARATIVE TRENDS IN AVERAGE FALL STANDARDIZED ACHIEVEMENT SUBTEST PERCENTILE SCORES OF CDC STUDENTS SUCCESSFULLY TERMINATED 1973 THROUGH 1977, STUDENTS IN CDC SCHOOLS, AND STUDENTS IN THE DISTRICT BY 1977-78 GRADE AND GRADE LEVEL AT TESTING



Scores of students in the District.
Scores of students in CDC Program schools.
Scores of students successfully terminated from the CDC Program.

* Fourth grade achievement percentile scores were computed from the Comprehensive Test of Basic Skills (CTBS).

scores in mathematics than were achieved on their second grade MAT subtests. CDC students showed greater deficits in mathematics than in reading. This was consistent with the achievement test score pattern of students in their schools and of students in the District.

The following achievement patterns were evident for former CDC students who were in grades four through six during the 1977-78 school year:

- Sixth grade students' Total Reading and Total Mathematics second grade achievement scores were lower than the average scores of students in their schools. When tested again in fourth grade their reading scores exceeded and their mathematics scores equaled their school averages. By sixth grade their achievement scores were again lower than the average scores of students in their schools.

- Of the three grade level groups studied, CDC students who were in fifth grade showed the lowest average achievement pattern in both Total Reading and Total Mathematics. Their second grade scores were lower than the average scores of students in their schools, particularly in Total Reading. When tested again in the fourth grade, their scores continued to remain lower than their school averages.

- The average achievement scores of fourth grade students in both Total Reading and Total Mathematics were similar to the scores of students in their schools. Their second grade Total Reading scores were slightly lower and their Total Mathematics scores were slightly higher than their school averages. When CDC students were tested again in fourth grade their achievement scores were equal to the scores of students in their schools.

In general, the variation in test scores from year to year was less pronounced for CDC students compared to students in their schools and in the District. In fact, their average percentile scores were fairly consistent over time.

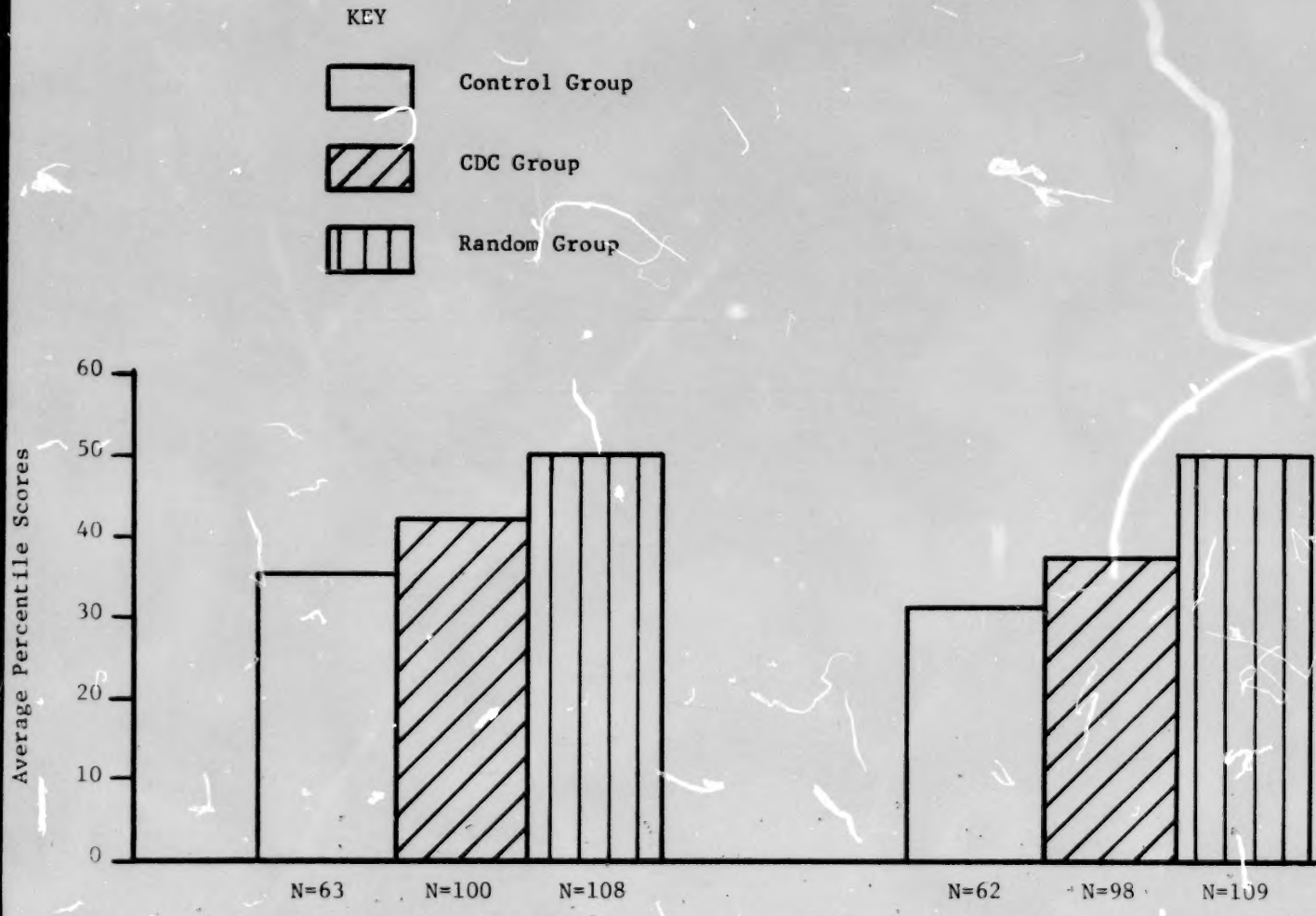
In summary, terminated CDC students had achievement levels similar to those of students in their schools. Their achievement scores were lower than District average academic achievement. These results were expected, given that CDC Program schools had lower average achievement scores than were characteristic of District schools as a whole. CDC students' test scores, though lower than average, were consistent from year to year.

Comparison of Academic Achievement

To compare the academic achievement of terminated CDC students with that of students in the control and random groups, the most recent (fall 1977 or spring 1977) MAT Total Reading and Total Mathematics subtest scores were collected for each student. Average percentile subtest scores for students in the three comparison groups (CDC, control and random), adjusted for ethnic, sex, and grade differences between the groups, are shown in Figure 2. The average percentile scores of CDC students were somewhat, but not significantly, higher in both Total Reading and Total Mathematics than the average scores of students in the control group. The average percentile scores of students in the random group were significantly higher for both subtests than the average scores of students in the control and CDC groups.

FIGURE 2

COMPARISON OF THE MOST RECENT AVERAGE MAT SUBTEST PERCENTILE SCORES FOR STUDENTS IN THE FOLLOW-UP STUDY CONTROLLING FOR ETHNIC, SEX, AND GRADE DIFFERENCES BETWEEN THE GROUPS



In general, terminated CDC students had academic achievement levels similar to those of students with a history of behavioral problems who never received CDC Program services. Both of these groups of students had lower average academic achievement than students without a known history of behavioral problems. These findings suggest that for these student groups there is some general correspondence between behavioral adjustment levels and academic achievement averages. The nature of this correspondence was not specifically examined in this study.

APPENDIX B

SAMPLES FOR THE FOLLOW-UP STUDY

The samples of students drawn for the two sections of the study are described below.

Purpose I: To Determine Long-term Trends and Maintenance of Gains Shown by Students Successfully Terminated from the CDC Program

A sample of 121 students was randomly selected from a population of 504 successfully terminated students who were enrolled in the District in fall 1977. These students were terminated from the CDC Program between fall 1973 and June 1976. Within this sample, 63 students had complete BRF data and were included in the assessment of behavioral adjustment. The assessment of school attendance before referral to the program and fall semester 1977 included 76 students from the randomly selected sample. In addition, the sample for analysis of fall semester 1976 school attendance included 509 successfully terminated CDC students.

Purpose II: To Compare Successfully Terminated CDC Students with Other Student Groups Not Receiving Service

The sample consisted of selected students in three groups: (1) successfully terminated CDC group, (2) control group, and (3) random group. The 121 randomly selected CDC students previously described comprised the terminated CDC group.

The control group consisted of 77 students of an original 110 students selected in 1975 by classroom teachers. Teachers were asked to choose students whom they would refer to a CDC Program if one were available in their school. These students had never received service in the CDC Program, but had an average Behavioral Rating Form score at the time of selection that was comparable to the average score of program participants. One hundred thirty-two students, randomly selected in January 1978, comprised the random group. These students had never participated in the CDC Program. Data for students in the random group were collected for baseline comparison purposes; students in this group did not have a known history of behavioral problems.

APPENDIX C

USE OF A BEHAVIORAL RATING FORM FOR THE MEASUREMENT OF SELF-ESTEEM

During the 1973-74 school year an evaluation of teacher ratings on the Behavioral Rating Form (BRF) was conducted for students in CDC Program schools who were in kindergarten through grade two. BRF ratings of students who were in the CDC Program were compared with ratings of students who were not in the program (random group). Highly significant differences were found between the two groups. Students who were not in the CDC Program had an average BRF composite score of 47.7 whereas students in the CDC Program had an average BRF composite score of 39. Thus it was concluded that the BRF was an appropriate instrument to measure differences in self-esteem for large groups of students. To determine if changes in teacher ratings had occurred since the initial study, a comparison was made of teacher ratings from 1973 through 1978. In addition, since the majority (83%) of the students in the follow-up study were in higher grades (grades three through six) than were students in the original study, an assessment of the appropriateness of the BRF for screening older students was also conducted.

Average teacher ratings on the BRF for CDC participants and random students (non-CDC participants) from 1973 through 1978 are presented in Table 5. The average BRF rating for students in the random group in February 1978 was 48.8. This is a slightly higher but similar average BRF rating to that which was observed for younger non-CDC Program participants in the 1973-74 school year. A slightly upward trend from 1973 through the 1975-76 school year in initial BRF scores for CDC participants was observed. A reversal in the trend occurred during the 1976-77 school year, when BRF scores of CDC participants returned to the same level as was reported for the 1973-74 school year.

To determine if BRF composite scores were different for students at various grade levels, an assessment of students' BRF composite scores was conducted. Average teacher ratings on the BRF for students in the random group (non-CDC Program participants) in February 1978 by grade level is presented in Table 6. Although older students have slightly higher BRF scores than do younger children, no significant differences in average BRF scores from one grade level to another were found. Separate comparisons were also conducted of BRF scores by grade level for students in the control group and for students in the successfully terminated group. Again, no significant differences were found between students' scores at various grade levels in these two groups.

Overall, no major changes in BRF composite scores for CDC Program participants or for non-CDC Program participants have occurred since 1973. In addition, the BRF appears to be a consistent measure for students at all grade levels. As was true in the earlier analysis, CDC participants showed lower average BRF scores than randomly selected students (non-CDC participants). The consistency

of teacher ratings for the checkpoints chosen (1973 vs. 1978) and the differences in average ratings for CDC Program participants versus randomly selected non-participants indicate that the BRF is a valid screening instrument for identifying groups of students who, in the judgment of their classroom teachers, manifest moderate to severe behavior problems.

TABLE 5

AVERAGE TEACHER RATINGS ON THE BRF FOR CDC PARTICIPANTS AND FOR NON-CDC PARTICIPANTS (RANDOM GROUP OF STUDENTS) FROM 1973 THROUGH 1978

	Average Teacher BRF Ratings					
	CDC Participants				Non-CDC Participants	
School Year	Initial Rating	(N of Students)	Review Rating	(N of Students)	Rating	(N of Students)
1973-74	39.0	(217)	---	---	47.7	(1036)
1974-75	40.5	(183)	42.2	(183)	---	---
1975-76	41.4	(244)	43.1	(205)	---	---
1976-77	38.9	(377)	40.1	(281)	---	---
1977-78	38.9	(415)	41.0	(371)	48.8	(120)

TABLE 6

AVERAGE TEACHER RATINGS ON THE BRF FOR A RANDOMLY SELECTED GROUP OF NON-CDC PROGRAM PARTICIPANTS BY GRADE LEVEL, FEBRUARY 1978

	Grade Level*				
	2	3	4	5	6
Average BRF Scores	48.5 (N=18)	47.5 (N=15)	48.3 (N=26)	48.8 (N=39)	50.7 (N=20)

*No significant differences in average BRF scores from one grade level to another were found.

BEHAVIORAL RATING FORM
CDCP JANUARY 1978

PLEASE RETURN COMPLETED FORM TO THE EVALUATION OFFICE, A & S

ID (21-27) Last Name First Name

School Code (38-40) School Name Teacher Name

PLEASE DO NOT WRITE IN SPACE BELOW

1. Does this child adapt easily to new situations, feel comfortable in new settings, enter easily into new activities?
_____always _____usually _____sometimes _____seldom _____never

(44)

2. Does this child hesitate to express opinions, as evidenced by extreme caution, failure to contribute, or a subdued manner in speaking situations?
_____always _____usually _____sometimes _____seldom _____never

(45)

3. Does this child become upset by failures or other strong stresses as evidenced by such behaviors as pouting, whining, or withdrawing?
_____always _____usually _____sometimes _____seldom _____never

(46)

4. How often is this child chosen for activities by classmates? Is this child's companionship sought for and valued?
_____always _____usually _____sometimes _____seldom _____never

(47)

5. Does this child become alarmed or frightened easily? Does the child become very restless or jittery when procedures are changed, exams are scheduled or strange individuals are in the room?
_____always _____usually _____sometimes _____seldom _____never

(48)

6. Does this child seek much support and reassurance from peers or the teacher, as evidenced by seeking their nearness or frequent inquiries as to whether she/he is doing well?
_____always _____usually _____sometimes _____seldom _____never

(49)

7. When this child is scolded or corrected, does she/he become either very aggressive or very sullen and withdrawn?
_____always _____usually _____sometimes _____seldom _____never

(50)

8. Does this child deprecate school work, grades, activities, and work products? Does the child indicate she/he is not doing as well as expected?
_____always _____usually _____sometimes _____seldom _____never

(51)

9. Does this child show confidence and assurance in actions towards teachers and classmates?
_____always _____usually _____sometimes _____seldom _____never

(52)

10. To what extent does this child show a sense of self-esteem, self-respect, and an appreciation of self-worthiness?
_____always _____usually _____sometimes _____seldom _____never

(53)

11. Does this child publicly brag or boast about exploits?
_____always _____usually _____sometimes _____seldom _____never

(54)

12. Does this child attempt to dominate or bully other children?
_____always _____usually _____sometimes _____seldom _____never

(55)

13. Does this child continually seek attention, as evidenced by such behaviors as speaking out of turn and making unnecessary noises?
_____always _____usually _____sometimes _____seldom _____never